



# FATS AND PROTEINS RESEARCH FOUNDATION, INC.

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## "THE DIRECTOR'S DIGEST"

D. M. DOTY

Technical Director

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The Director's Digest No. 6, December 16, 1964, presented preliminary results from FPRF supported beef cattle feeding trials made at the North Carolina Agricultural Experiment Station. We have now received the final report on this study "Influence of a Sugar-Glyceride and Animal Fat Added to the Ration of Growing-Fattening Beef Steers" by M. B. Wise, B. R. Haskins, E. R. Barrick and T. N. Blumer. The summary of this report follows:

"Twenty yearling Angus steers were employed in an experiment to determine the influence of glyceryl hexose tallowate on performance and carcass characteristics when this material was added to the ration in addition to animal fat. The treatments consisted of a basal ration, basal with 5% added fat, basal with 5% fat and 0.5% GHT, and basal with 5% fat and 2% GHT. The steers were fed ad libitum for 108 days and carcass evaluation as well as rumen volatile fatty acid data were obtained. On the basis of the data it appears that GHT as well as animal fat was contributory to increased carcass weight increases of growing-fattening beef cattle. Further investigation involving glyceryl hexose tallowate in beef cattle rations is indicated."

Some of the data extracted from the final report are presented below.

TABLE I. Performance Data (a)

	Basal Ration	Basal + 5% An.Fat	Basal + 5% An.Fat + 0.5% GHT	Basal 5% An. Fat + 2% GHT
Av. Initial Wt., lb.	769	756	767	791
Av. Final Wt., lb.	975	968	1031	1007
Av. Daily Gain, lb.	1.91	1.96	2.44	2.00
Av. Daily Feed Intake, lb.	20.5	18.8	19.8	19.0
Feed/Gain	10.8	9.6	8.1	9.5
Shrunk Wt., lb.	945	950	1012	990
Shrink, lb.	30	18	19	17

a) Five animals per treatment; experimental period of 108 days

TABLE II. Carcass Evaluation Data

	Basal Ration	Basal + 5% An.Fat	Basal + 5% An.Fat + 0.5% GHT	Basal + 5% An.Fat + 2% GHT
Carcass Wt., lb.	577	579	612	610
Dressing %	61.1	60.9	60.4	61.6
Carcass Grade a)	10.8	11.2	10.0	11.0
Calculated Initial Carcass Wt., lb. b)	400	393	399	411
Carcass Wt. Gain, lb. c)	177	186	213	199
Increase over basal, %		5.1	20.3	12.4

a) Av. Good=10; high Good=11; low Choice=12; etc.

b) Assumed initial dressing percentage of 52 x initial live weight.

c) Final carcass weight minus calculated initial carcass weight

The data show, and the report states, "Steers fed rations containing animal fat gained slightly more on less feed than animals fed the basal ration. It appeared that GHT resulted in further slight stimulations in gain, especially at the 0.5% level." Further, "No significant differences in dressing per cent, carcass grade, ribeye muscle area, or rind thickness were exhibited in this experiment. If one assumes a dressing per cent of fifty-two for all animals at the beginning of the experiment and calculates the initial carcass weight, this can be subtracted from the actually determined final carcass weight to give carcass weight gain. When this evaluation is used and the control ration without added fat is used as a basis for comparison the addition of 5% fat resulted in a 5.1% increase in carcass gain, fat with 0.5% GHT gave a 20.3% increase and fat with 2% GHT resulted in a 12.4% increase in carcass gains."

The data in the report show that the volatile fatty acids in the rumen of animals fed fat contained a higher proportion of propionic acid and a lower proportion of acetic acid than was true for animals fed the basal ration with no added fat. It has been postulated that such a shift in fatty acids in the rumen is associated with greater body weight gains.

Results of this test are so favorable that the FPRF Research Committee and Board of Directors have authorized a more extensive feeding trial at the North Carolina Agricultural Experiment Station to confirm the value of fat and GHT in beef cattle rations.

TAX STATUS OF FPRF AND CONTRIBUTIONS TO FPRF

The Fats and Proteins Research Foundation, Inc. has been granted tax-exempt status under Section 501 (c) (6) of the Internal Revenue Code. The attorney for FPRF has advised that members contributions to FPRF should be deducted as a business expense, and not as a charitable contribution, for Federal Income Tax purposes.